## IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

Please replace paragraph **[1025]** with the following amended paragraph:

B1 **[1025]** FIG. 17 is a block of bits (BLOB) system overhead parameter message configuration.

Please replace paragraph **[1040]** with the following amended paragraph:

**[1040]** FIG. 1 serves as an example of a communications system 100 that supports a number of users and is capable of implementing at least some aspects and embodiments of the invention. Any of a variety of algorithms and methods may be used to schedule transmissions in system 100. System 100 provides communication for a number of cells 102A through 102G, each of which is serviced by a corresponding base station 104A through 104G, respectively. It is appreciated that the term "base station 104," used throughout the specification, refers to "base stations 104A, 104B, 104C, 104D, 104E, 104F and 104G." The term "base station 104" is used for the sake of conciseness, only. In the exemplary embodiment, some of base stations 104 have multiple receive antennas and others have only one receive antenna. Similarly, some of base stations 104 have multiple transmit antennas, and others have single transmit antennas. There are no restrictions on the combinations of transmit antennas and receive antennas. Therefore, it is possible for a base station 104 to have multiple transmit antennas and a single receive antenna, or to have multiple receive antennas and a single transmit antenna, or to have both single or multiple transmit and receive antennas.

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Please replace paragraph **[1041]** with the following amended paragraph:

**[1041]** Terminals 106 in the coverage area may be fixed (i.e., stationary) or mobile. As shown in FIG. 1, various terminals 106 are dispersed throughout the system. It is appreciated that the term "terminal 106," used throughout the specification, refers to "terminals 106A, 106B, 106C, 106D, 106E, 106F and 106G." The term "terminal 106" is used for the sake of

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conciseness, only. Each terminal 106 communicates with at least one and possibly more base stations 104 on the downlink and uplink at any given moment depending on, for example, whether soft handoff is employed or whether the terminal is designed and operated to (concurrently or sequentially) receive multiple transmissions from multiple base stations. Soft handoff in CDMA communications systems is well known in the art and is described in detail in U.S. Patent No. 5,101,501, entitled "Method and system for providing a Soft Handoff in a CDMA Cellular Telephone System," which is assigned to the assignee of the present invention.

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Please replace paragraph **[1042]** with the following amended paragraph:

**[1042]** The downlink, or FL, refers to transmission from the base station to the terminal, and the uplink, or RL, refers to transmission from the terminal to the base station. In the exemplary embodiment, some of terminals 106 have multiple receive antennas and others have only one receive antenna. In FIG. 1, base station 104A transmits data to terminals 106A and 106J on the downlink, base station 104B transmits data to terminals 106B and 106J, base station 104C transmits data to terminal 106C, and so on.

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Please replace paragraph **[1046]** with the following amended paragraph:

**[1046]** The HSBS is a stream of information provided over an air interface in a wireless communication system. The “HSBS channel” ~~to~~ refers to a single logical HSBS broadcast session as defined by broadcast content. Note that the content of a given HSBS channel may change with time, e.g., 7am News, 8am Weather, 9am Movies, etc. The time based scheduling is analogous to a single TV channel. The “Broadcast channel” refers to a single forward link physical channel, i.e., a given Walsh Code, that carries broadcast traffic. The Broadcast Channel, BCH, corresponds to a single CDM channel.

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Please replace paragraph **[1056]** with the following amended paragraph:

**[1056]** There are several possible subscription/revenue models for HSBS service, including free access, controlled access, and partially controlled access. For free access, no subscription is needed by the user to receive the service. The BS broadcasts the content without encryption and interested mobiles can receive the content. The revenue for the service provider

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B6 can be generated through advertisements that may also be transmitted in the broadcast channel. For example, upcoming movie-clips can be transmitted for which the studios will pay the service provider.

Please replace paragraph **[1060]** with the following amended paragraph:

B7 **[1060]** Continuing with FIG. 3, for the application layer of the MS, the protocol specifies audio codec, visual codec, as well as any visual profiles. Additionally, the protocol specifies Radio Transport Protocol (RTP) payload types when RTP is used. For the transport layer of the MS, the protocol specifies a User Datagram Protocol (UDP) port to be used to carry the RTP packets. The security layer of the MS is specified by the protocol (IP sec), wherein security parameters are provided via out-of-band channels when the security association is initially established with the CS. The link layer specifies the IP header compression parameters. As illustrated, processing information used for transmission by the CS and required by the MS, is not necessarily needed to be known by the BS/PCF or PDSN. Such information may include IPsec information, MPEG information, etc.

Please replace paragraph **[1063]** with the following amended paragraph:

B8 **[1063]** Further, the broadcast channel may incorporate various combinations of upper layer protocols, based on the type of content being delivered. The mobile receiver also requires information relating to these upper layer protocols for interpretation of the broadcast transmissions. According to one embodiment, the protocol stack is communicated via out-of-band methods, wherein out-of-band methods indicate[[s]] the transmission of information via a separate channel distinct from the broadcast channel. With this approach, the description of the upper layer protocol stack is not transmitted over the broadcast channel or overhead system parameters channel.

Please replace paragraph **[1065]** with the following amended paragraph:

B9 **[1065]** To avoid requiring coordination between the wireless network and CS, the service can use out-of-band channels for transmitting information to the mobile station regarding the protocol options above the IP network layer. FIG. 15 illustrates a broadcast flow according to

one embodiment. The horizontal axis represents the topology of the system, i.e., infrastructure elements. The vertical axis represents the time line. At time t1 the MS accesses the out-of-band channel via the BS. Note that the MS may access the network by selecting a packet data service option, such as by using a dedicated packet data service option channel designated as SO 33. Effectively, the MS selects a packet data service option to establish a Real Time Streaming Protocol (RTSP) session with the CS. In this example, the RTSP instruction is used, specifically "RTSP: Describe." The MS requests a description of the application and transport protocols used for the broadcast stream from the CS at time t3. Note that in addition to the use of RTSP, the Session Initiation Protocol (SIP) may also be used to request the description of the application and transport protocols. The description is carried via Session Description Protocol (SDP) at time t4. Transmission of the protocol may be performed while the user is accessing the broadcast service. Note that RTSP and SDP are standardized approaches for establishing a uni-directional streaming service in IETF and in 3GPP2. The mobile station will also use a packet data service to request the PDSN to identify the broadcast service header compression protocol. The PDSN then relays~~and relay~~ any compression initialization information to the mobile station at time t2. In one embodiment, Internet Protocol Control Protocol IPCP is used to exchange the header compression information with the mobile station. Similarly, this same mechanism may be extended to provide information for the broadcast stream.

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Please replace paragraph **[1066]** with the following amended paragraph:

**[1066]** If the broadcast service protocol options change, the mobile station requires notification. One embodiment applies a Security Parameters Index (SPI) to indicate when protocol options may have changed. If the protocol options change as a result of using a different CS for the system, or the mobile station handing off to a different system, the SPI will change automatically because the source IP address of the CS changes. Furthermore, if the CS does not change and the same one is used with different protocol options, the CS will be required to change the SPI to indicate that the parameters have changed. When the mobile station detects this new SPI, it will obtain the new protocol description by setting-up a packet data service call and contacting the PDSN and CS whose IP address is included in the SPI.

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Please replace paragraph **[1070]** with the following amended paragraph:

**[1070]** The format of the BSPM of the exemplary embodiment is illustrated in FIG. 16. The various parameters indicated in the message are listed with the number of bits allocated in the message for each. The pilot PN sequence offset index is identified as PILOT_PN. The BS sets the PILOT_PN field to the pilot PN sequence offset for the corresponding base station in units of 64 PN chips. The BSPM_MSG_SEQ refers to a broadcast service parameters message sequence number. When any of the parameters identified in a current BSPM has changed since the previous transmission of the BSPM, the BS increments the ~~BSSPM_CONFIG_SEQ~~ BSPM_MSG_SEQ. The HSBS_REG_USED is a broadcast service registration used indicator. This field indicates the frequencies used for paging a MS subscriber to the broadcast service. The HSBS_REG_TIMER (High-Speed Broadcast Service_Registration_Timer) is a broadcast service registration timer value. If the field HSBS_REG_USED is set to '0', the base station will omit this field. Else, the base station includes this field HSBS_REG_TIMER with significance given as: the BS sets this field HSBS_REG_TIMER to the length of the registration duration for the broadcast service channels; or the base station sets this field HSBS_REG_TIMER to '00000' if the MS is required to register the HSBS channel each time it starts to monitor a HSBS channel.

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Please replace paragraph **[1071]** with the following amended paragraph:

**[1071]** Continuing with FIG. 16, the NUM_FBSCH is the number of forward broadcast supplemental channels. The BS sets this field to the number of forward broadcast supplemental channels transmitted by the corresponding BS. The NUM_HSBS_SESSION is a number of broadcast service sessions. The BS sets this field to the number of broadcast service sessions being transmitted by the corresponding BS. The NUM_LPM_ENTRIES are the number of logical-to-physical mapping entries. The BS sets this field to the number of logical, i.e., broadcast service sessions, to physical, i.e. forward broadcast supplemental channel, mapping entries carried in this message. The BS sets a Forward Broadcast Supplemental Channel Identifier, FBSCH_ID, corresponding to the forward broadcast supplemental channel. If the ~~CDMA_FREQ~~FBSCH_CDMA_FREQ field is included in this record, the base station ~~shall~~ set the Frequency included indicator, FREQ_INCL, bit to '1'; otherwise, the base station will set the bit to '0'.

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Please replace paragraph **[1074]** with the following amended paragraph:

**[1074]** The FBSCH_RATE is the data ~~fate~~ rate of the forward broadcast supplemental channel, wherein the base station sets this field to the data rate used on the forward broadcast supplemental channel. The FBSCH_FRAME_SIZE is the frame size of the forward broadcast supplemental channel, wherein the base station sets this field to the frame size on the forward broadcast supplemental channel. The FBSCH_FRAME_REPEAT_IND is the Forward Broadcast Supplemental Channel Frame Repeat Indicator, wherein if frame repetition is used on the Forward Broadcast Supplemental Channel, the base station sets this field to '1'; else, the base station sets this field to '0'.

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Please replace paragraph **[1076]** with the following amended paragraph:

**[1076]** The NUM_NGHBR is the number of neighbors supporting forward broadcast supplemental channel soft handoff. If the field FBSCH_SHO_SUPPORTED is set to '1', then the base station will set [[this]]the NUM_NGHBR field to the number of neighbors supporting soft handoff on this Forward Broadcast Supplemental Channel. The NGHBR_PN is the neighbor pilot PN sequence offset index. The base station sets this field to the pilot PN sequence offset for this neighbor, in units of 64 PN chips. The NGHBR_FBSCH_CODE_CHAN_INCL is the neighbor pilot forward broadcast supplemental channel code channel index included indicator. If the neighbor pilot Forward Broadcast Supplemental Channel Code Channel index is included in this message, the base station sets this field to '1'; otherwise, the base station sets this field to '0'. The NGHBR_FBSCH_CODE_CHAN is the neighbor pilot Forward Broadcast Supplemental Channel Code Channel Index. If the NGHBR_FBSCH_CODE_CHAN_INCL field is set to '0', the base station omits [[this]]the NGHBR_FBSCH_CODE_CHAN_INCL field; otherwise, the base station includes [[this]]the NGHBR_FBSCH_CODE_CHAN_INCL field and the BS sets [[this]]the NGHBR_FBSCH_CODE_CHAN_INCL field to the code channel index that the mobile station is to use on this Forward Broadcast Supplemental Channel on this neighbor.

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Please replace paragraph **[1082]** with the following amended paragraph:

[1082] In the exemplary embodiment, the logical-to-physical mapping specifies the HSBS channel (HSBS_ID/BSR_ID) carried in a corresponding F-BSCH (FBSCH_ID). The set {HSBS_ID, BSR_ID, FBSCH_ID} completely specifies (for the MS) where to find and listen to a given broadcast service. As such, the logical-to-physical mapping information is transmitted over the air to the MSs such that a MS desiring to access to a given HSBS channel may determine the FBSCH channel to monitor. Therefore, the following information is transmitted to the mobile station over the air interface: Broadcast physical channel parameters; Broadcast logical channel parameters; Logical-to-physical mapping. [[; and]] One option to signal these broadcast service parameters is to define a new overhead message in cdma2000 that is specific to broadcast service.

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Please add the following new paragraph **[1085.1]**:

Access Network

[1085.1] A general access network topology for a system 1000 is illustrated in FIG. 13 having a CS 1002, a PDSN 1004, and two PCF: PCF1 1006 and PCF2 1008. FIG. 13 includes datagrams specifying the transmissions from each of the infrastructure elements illustrated in the system 1000. As illustrated, the CS 1002 prepares an IP packet of information and transmits the packet in at least one frame, having a payload and inner header, H1. The inner header has source and destination information, wherein the source identifies the CS 1002 and the destination identifies a subscription group. The CS 1002 transmits the frame to the PDSN 1004, which maps the destination subscription group to individual subscribers in a set of active users. The PDSN 1004 determines the number of individual users in the active set that are in the destination subscription group and duplicates the frame received from the CS 1002 for each of those users. The PDSN 1004 determines the PCF(s) corresponding to each of the users in the subscription group. The PDSN 1004 then appends an outer header, H2, to each of the prepared frames, wherein H2 identifies a PCF. The PDSN 1004 then transmits the frames to the PCF(s). The transmission from the PDSN 1004 includes the original payload, the header H1, and the Header H2. As illustrated, the PDSN 1004 sends N transmission frames to PCF1 1006 and sends M transmission frames to PCF2 1008. The N transmission frames correspond to N users in the subscription group serviced via PCF1 1006 and the M transmission frames correspond to M users

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in the subscription group serviced via PCF2 1008. In this scenario, the PDSN 1004 duplicates received frames any number of times for transmission to the corresponding subscribers.

[Please add the following new paragraph [1085.2]:]

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**[1085.2]** FIG. 14 illustrates an exemplary embodiment of a system 1020 having a CS 1022 communicating with PCF1 1026 and PCF2 1028 via PDSN 1024. As illustrated, the CS 1022 prepares an IP packet of information and transmits the packet in at least one frame, having a payload and inner header, H1. The inner header has source and destination information, wherein the source identifies the CS 1022 and the destination identifies a subscription group. The CS 1022 transmits the frame to the PDSN 1024, wherein the PDSN 1024 appends an outer header, H2, wherein H2 routes the frame to at least one PCF. The PDSN 1024 then transmits the frames to the PCF(s). The transmission from the PDSN 1024 includes the original payload, the header H1, and the Header H2. As illustrated, the PDSN 1024 sends one transmission frame to PCF1 1026 and sends one transmission frame to PCF2 1028. The PCF1 1026 sends one transmission frame to the N users in the subscription group. The PCF2 1028 sends one transmission frame to the M users in the subscription group.

[Please add the following new paragraph [1085.3]:]

**[1085.3]** According to an exemplary embodiment, the broadcast CS sends IP packets containing encrypted broadcast content to a multicast group identified by a class-D multicast IP address. This address is used in the destination address field of the IP packets. A given PDSN 1024 participates in multicast routing of these packets. After header compression, the PDSN 1024 places each packet in an HDLC frame for transmission. The HDLC frame is encapsulated by a Generic Routing Encapsulation (GRE) packet. The key field of the GRE packet header uses a special value to indicate a broadcast bearer connection. The GRE packet is appended with the 20-byte IP packet header having a source address field identifying the IP address of the PDSN 1024, and destination address field uses a class-D multicast IP address. It is recommended that this multicast IP address is different from the one used by the broadcast CS. The system 1020 configures at least one multicast routing table of the respective PCFs and PDSNs. The packets delivered in the broadcast connection are provided in sequence; in the exemplary embodiment

B16 the GRE sequencing feature is enabled. Duplication of the IP multicast packets is done in multicast-capable routers.

Please replace paragraph **[1097]** with the following amended paragraph:

**[1097]** FIG. 23 illustrates a method 5000 of providing broadcast service parameter and protocol information using an in-band method, wherein the overhead type information is provided with the broadcast content on the broadcast channel. The term in-band is intended to indicate that overhead type information is provided on the same channel as the broadcast content and thus does not require a separate transmission mechanism, i.e., channel. The method 5000 first accesses the ~~BPSM~~BSPM at step 5002. The MS extracts the broadcast channel information, the physical layer information, and the MAC layer information from the BSPM. Header compression information is received directly from the PDSN at step 5004. This can be done by either having the MS directly contact the PDSN via a packet data service option (out-of-band) or by having the PDSN insert the header compression configuration information into the broadcast stream to the MS. At step 5006 the MS accesses the Broadcast Content (BC). In response to receipt of the header compression information, the MS is able to receive the SDP transmitted on the broadcast channel with the broadcast content at step 5008. The SDP contains parameters and protocols for receiving the associated broadcast session. The MS applies the information contained in the SDP to receive, decode, and process broadcast content received on the broadcast channel at step 5010.

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Please replace paragraph **[1098]** with the following amended paragraph:

**[1098]** When a subscriber to the broadcast service desires to change to another broadcast session, the set-up and/or initiation of the new broadcast session may introduce unacceptable delays to the subscriber. One embodiment provides a memory storage unit at the receiver, wherein at least a portion of the information is stored at the receiver and may be used to quickly change from one broadcast session, i.e., program, to another, or alternately, may be used to recall a previously accessed broadcast session. FIG. [[23]]24 illustrates a memory storage 6000 that stores the SPI and SDP corresponding to each broadcast session accessed. The overhead information corresponding to a current broadcast session is stored in memory 6000, wherein the

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stored information is the last received information. In one embodiment, the memory storage
328 6000 is a First In First Out (FIFO) memory storage unit. In an alternate embodiment, a cache memory is used. In still another embodiment, a Look Up Table (LUT) stores information relating to accessed broadcast sessions.

Please add the following new paragraph **[1103.1]**:

**[1103.1]** FIG. 6 illustrates an IP format 400, wherein a datagram may be fragmented into multiple payloads. Each fragment is transmitted having a header and payload portion. The
329 headers 404 and 410 identify the length of each fragment, LENGTH 404, 410, respectively. A pad 414 may be added to the last fragment. The CONT fields 402, 408, are used to connect fragments.

Please replace paragraph **[1108]** with the following amended paragraph:

**[1108]** The exemplary embodiment applies a version of HDLC framing that applies a subset of the HDLC defined parameters. FIG. 9 illustrates one embodiment of ~~HDLS~~HDLC framing, wherein frame 700 includes a plurality of fields as defined by the HDLC protocol outlined in RFC 1662. Field 702 defines a FLAG or indication of a start of frame. The FLAG
320 has a designated bit length and is defined by a predetermined pattern of bits. The HDLC is convenient to apply as the HDLC is a commonly available standardized protocol. One disadvantage of the full HDLC framing protocol is the processing time required to generate the frames at the transmitter and to retrieve the frames at the receiver.

Please replace paragraph **[1110]** with the following amended paragraph:

**[1110]** In particular, the HDLC protocol is considered processor intensive as further processing is used to ensure the payload does not include the same sequence of bits as the FLAG. At the transmitter, if a FLAG sequence of bits is detected in the payload, an escape character is inserted into the payload to identify the FLAG as part of the payload and not indicating a start of
321 frame. The process of adding an escape character is referred to as "escaping" hexadecimal patterns of 0x7E and 0x7D in the frame payload. An alternative method referred to as the Efficient Framing Protocol that is less processor intensive than the HDLC-like framing is

described hereinbelow. FIG. 9 illustrates the options of using HDLC framing to transport PPP frame. For the HSBS operation, the HDLC-like framing overhead can be reduced by eliminating fields that are not required, or have little meaning and/or provide little information, for a uni-directional broadcast. As described hereinabove, the FLAG is a predetermined sequence of bits indicating the beginning of an HDLC frame. The exemplary embodiment incorporates a FLAG or other start of frame indicator 802, as illustrated within the format 800 of FIG. 10. In contrast to the format of FIG. 9, the end of a frame is not indicated with overhead information in the exemplary embodiment. As the address field 704 and control field[[s]] 706 of the format 700 have static values, these are not included in the format 800.

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Please replace paragraph **[1111]** with the following amended paragraph:

**[1111]** Continuing with FIG. 10, as the purpose of the Protocol field 708 (FIG. 9) is to identify the payload type, such as LCP control packet, ROHC packet, IP packet, etc., this discriminator is not required for broadcast operation as all packets in the broadcast channel belong to the same type. For example, if ROHC compression is used for packet transmission, all packets in the broadcast channel are processed as ROHC packets. The types of ROHC packets, such as IR packet, compressed packet, etc., are distinguished by the Packet Type field in the ROHC packet header. Therefore, the Protocol field is not included in format 800. Further, the format 800 includes an error checking field 806 after the payload 804. The error checking field 806 provides information to the receiver to allow the receiver to check for errors in the received payload. The exemplary embodiment incorporates a Frame Check Sum (FCS) 712 which may be specified as null, 16 bits, or 32 bits. Since an HDLC frame may span multiple physical-layer frames in the broadcast channel, it is recommended to use a 16-bit FCS.

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